WHAT IS CLAIMED IS:

1. In a method for implanting a tubular prosthesis in a body lumen of the type wherein the tubular prosthesis is expanded *in situ* so that an exterior surface of the prosthesis engages an inner wall of the body lumen over an interface region, the improvement comprising expanding the tubular prosthesis, in a sealing layer disposed in at least a portion of the interface region.

2. A method as in claim 1, wherein the tubular prosthesis has at least a first end, a second end, and a lumen therebetween, and wherein the sealing layer is disposed over at least one circumferential band within the interface region.

3. A method as in claim 2, wherein the sealing layer is disposed within substantially the entire interface region.

4. A method as in claim 1, wherein the tubular prosthesis has a first end and a pair of branched second ends with lumens therebetween, and wherein the sealing layer is disposed over at least a circumferential band within the interface region near the first end.

5. A method as in claim 4, wherein the sealing layer is disposed over substantially the entire interface region.

6. A method as in claim 1, wherein the sealing layer is selected from the group consisting of gels, foams, sponges, adhesives, biological polymers, microporous meshes, and a self-expanding mechanical assembly.

7. A method as in claim 6, wherein the sealing layer is a microporous silicone rubber mesh.

8. A method as in claim 1, wherein the sealing layer is disposed over at least a portion of the exterior surface of the tubular prosthesis prior to *in situ* expansion.

9. A method as in claim 1, wherein the improvement further comprises introducing the sealing layer within the body lumen prior to *in situ* expansion of the tubular prosthesis.

10. A method for implanting a tubular prosthesis in a body lumen, said method comprising:

introducing a sealing layer over an interface region along an interior wall of the body lumen; and

expanding a tubular prosthesis within the body lumen so that the sealing layer provides a seal between an exterior surface of the tubular prosthesis and the interior wall of the body lumen.

11. A method as in claim 10, wherein the sealing layer introducing step comprises transluminally positioning a distal end of a catheter at the interface region within the body lumen and applying a fluid phase sealing material from the distal end of the catheter over said interface region.

12. A method as in claim 11, wherein the fluid phase sealing material is selected from the group consisting of gels, foams, adhesives, and biological polymers.

13. A method as in claim 10, wherein the tubular prosthesis expanding step comprises transluminally positioning a distal end of a catheter

near the sealing layer within the body lumen and releasing a radially constrained, self-expanding prosthesis within said sealing layer.

14. A method as in claim 10, wherein the tubular prosthesis expanding step comprises transluminally positioning a distal end of a catheter near the sealing layer within the body lumen and inflating a balloon on the catheter to expand an at least partially malleable prosthesis within said sealing layer.

15. An improved tubular prosthesis of the type including an expansible tubular frame, wherein the improvement comprises a sealing layer formed over at least a portion of the exterior surface of the tubular frame, said sealing layer being expansible together with the tubular frame and capable of forming a liquid-resistant barrier over an annular exterior segment of the frame after expansion when implanted in a body lumen.

16. An improved tubular prosthesis as in claim 15, wherein the expansible tubular frame is at least partly resilient so that it can be released from radial constraint to assume a large diameter configuration.

17. An improved tubular prosthesis as in claim 15, wherein the expansible tubular frame is at least partly malleable so that it can be radially expanded by application of an internal expansion force.

18. An improved tubular prosthesis as in claim 15, wherein the sealing layer is selected from the group consisting of gels, foams, adhesives biological polymers, sponges, compliant sleeves, microporous meshes, and a self-expanding mechanical assembly.

19. An improved tubular prosthesis as in claim 18, wherein the sealing layer is a microporous silicone rubber mesh.

20. An improved tubular prosthesis as in claim 15, wherein the sealing layer is disposed over at least a circumferential band of the exterior surface of the tubular frame.

21. An improved tubular prosthesis as in claim 20, wherein the sealing layer is disposed over substantially the entire exterior surface.

22. A fluid delivery catheter, said catheter comprising:

a catheter body having a proximal and a distal end, and at least two lumens extending therebetween;

an outer balloon disposed near the distal end of the catheter body and having fluid delivery ports formed therein, said outer balloon being connected to receive a fluid from a first of the lumens; and

an inner balloon disposed on the catheter body within the outer balloon and connected to receive an inflation medium from a second of the lumens, wherein expansion of the inner balloon will expel fluid within the outer balloon outwardly through the delivery ports.

23. A fluid delivery catheter as in claim 22, wherein the outer balloon is non-compliant and the inner balloon is elastic.

24. A fluid delivery catheter as in claim 23, wherein the outer balloon has a generally cylindrical profile when expanded and wherein the delivery ports are substantially uniformly distributed over an outer cylindrical wall thereof.

25. A fluid delivery catheter as in claim 22, wherein the fluid delivery ports have sufficient flow resistance to inhibit fluid flow in the absence of internal pressure provided by the inner balloon.

26. A method for delivering a fluid to an inner wall of a body lumen, said method comprising:

positioning an outer balloon at a target site within the body lumen;

at least partially filling the outer balloon with a fluid material to be delivered; and

inflating an inner balloon within the outer balloon to expel the fluid material through fluid delivery ports formed in the outer balloon.

27. A method as in claim 26, wherein the body lumen is a blood vessel and the target site is a location which is to receive a tubular prosthesis.

28. A method as in claim 27, wherein the site is proximate an aneurysm.

29. A method as in claim 26, wherein the outer balloon is filled with a material selected from the group consisting of gels, foams, adhesives, and biological polymers.

30. A method as in claim 29, wherein the outer balloon is filled sufficient to engage its outer surface against an interior wall of the body lumen without substantial loss of fluid material through the delivery ports prior to expansion of the inner balloon.

31. A method as in claim 30, wherein the inner balloon is elastic and is inflated sufficiently to conform to the inner wall of the outer balloon to expel substantially all fluid through the delivery ports.